

This listing of claims will replace all prior versions of claims in the application.

Claim 1. (currently amended) A method for depositing multiple metal layers on a semiconductor microchip wafer substrate, comprising:

(a) contacting a semiconductor microchip wafer substrate with an electrolytic plating composition, the plating composition comprising:

(i) a copper metal source and

(ii) a second metal source distinct from the (i) copper metal source and that is chosen from among zinc, tantalum, beryllium, magnesium, titanium, tin, palladium, silver, cadmium, or a copper alloy that comprises one or more of zinc, tantalum, beryllium, magnesium, titanium, tin, palladium, silver and cadmium distinct from copper;

(b) electrolytically depositing a first metal layer of copper, from the copper metal source, on the semiconductor microchip wafer substrate at a first reduction potential;

(c) electrolytically depositing a second metal layer, from the second metal source, on the semiconductor microchip wafer substrate at a second reduction potential at least 0.2 V different distinct from the first reduction potential,

wherein the first metal layer functions as an electrical circuit, and the second metal layer functions as an insulator layer.

Claim 2. (original) The method of claim 1 wherein the first metal layer is a substantially homogenous copper metal layer.

Claim 3. (original) The method of claim 1 wherein the second metal layer is a copper alloy.

Claims 4-6. (cancelled)

Claim 7. (currently amended) The method of claim 1 wherein a plurality of first metal layers layer are deposited with a plurality of alternating second metal layers.

Claims 8-31. (cancelled)